UNITED STATES PATENT AND TRADEMARK OFFICE

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10/786,777	02/25/2004	Daniel Louis Bates	213187/00008	3714

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/9/2008 have been fully considered but they are not persuasive. Firstly applicant has amended independent claims to recite a "linked video file comprise of a pixel object file and a separate data object file, including information related to the object that corresponds to the selected pixel object, the data object file being linked to the corresponding pixel object file..." and wherein said linked video file is "configured to be exportable to a media player..." and has subsequently argued that Rangan in combination with Feinleib and Courtney fail to teach this limitation. Examiner respectfully disagrees. It should be noted that Rangan teaches pixel object files, i.e. a separate data stream is created which is not embedded in the video content. (Col 5 lines 1-20, Col 6 lines 46-65, Col 9 lines 18-29, Col 10 lines 50-58) It should be noted that this separate data stream is synchronous to the original video stream and contains frame-by-frame coordinate data of the tracked image entity. (pixel object files). In addition Feinleib teaches data object files (enhancing content which is not embedded in video content). (Col 3 lines 51-65, Col 9 lines 27-39, Col 11 lines 17-27) Feinleib teaches a technique for synchronizing this enhancing content (closed captioning for example) with the primary content (video files) in such a manner which is independent of how these separate contents are delivered to the viewer computing units. Again applicant' specification merely recites data object files could be "overlay information...etc and thus, enhancing content such as closed captioning, animation, text, hypermedia, etc as taught by Feinleib may be enhancement content.

Additionally applicant has argued that Rangan in combination with Feinleib and Courtney fail to teach applicant's amendment of "…a linked video file is configured to be exportable to a media player." Examiner respectfully disagrees. It should be noted that this recitation is merely a statement of **intended use** which suggests or makes optional to export video files to a media player <u>but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation</u>. (See MPEP 2106 paragraph II, Section C). Furthermore it should be noted that Rangan explicitly teaches enhancing content (data object files) may reside on a computer disk or a CD-ROM which can be accessed during playing of the video file, thus suggesting that it would be possible to configure such data files (hyperlink for example) found in a CD-ROM to be exportable (transferred to) to a media player so that the files can be accessed.

In addition, applicant has noted persons of ordinary skill in the art would not combine Rangan with Feinleib to produce the claimed invented since "this is has nothing to with the invention claimed in the subject application". Examiner notes that the motivation to combine references under 35 USC 103 does not have to be the same as that intended by the applicant nor does it have to solve the same problem applicant intends to solve in the art. Lastly, applicant has argued that while Courtney teaches a capture rate of 3 FPS, Courney's 315 frames are a sample not a predtermiend cluster and persons of ordinary skill in the art would not combine Rangan and Feinlieb with Courtney. Examiner respectfully disagrees. It should be noted that Courtney is utilized to simply show it was known in the art to sample video content at a sample rate which is

a divisor of plural standard playback rates.   Again it should be noted that the video

sampling rate as taught by Courtney is 3 frames per second.   Further in regards to

applicant's assertion that the motivation of Courtney has nothing to do with the present

invention, again examiner notes the motivation to combine references under 35 USC

103 does not have to be the same as that intended by the applicant nor does it have to

solve the same problem applicant intends to solve in the art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 11, 13-17, 19-27 and 29 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Rangan (6198833) in view of Feinleib (6637032) in further view

of Courtney (6424370)

Regarding claims 1 and 19, Rangan teaches an image processing system for

processing video content in a sequence of video frames and linking a pixel object

embedded in said video content to data corresponding to the pixel object in a sequence

of video frames by explaining a system is provided for tracking a moving entity in a

video presentation, the system comprising a computer station presenting the video

presentation on a display as a series of bitmapped frames; and a tracking module

receiving the video data stream. (Col 3, lines 26-29); said image processing system

comprising a **video capture** system for capturing a frame of said sequence of video

frames by showing a recording function for accepting the positions wherein the pixel

signature (defined in the art as a local neighborhood around given pixel) most closely

matches the image signature as the true positions of the image entity in the next

frames. (Col 3, lines 43-46) and in FIG. 1 input data stream 15 to tracking module 13 is

a stream of successive bitmapped frames in a normalized resolution, required by the

tracking module. (Col 5, lines 35-37) The authoring station can be based on virtually

any sort of computer platform and operating system, and in a preferred embodiment, a

PC station running MS Windows is used, in which case the input stream 16, regardless

of protocol, is converted to a digital video format that can be interpreted and played

back as a sequence of bitmapped frames. (Col 5, lines 37-43) Furthermore Rangan

teaches a user interface for enabling a user to select the pixel object in said captured

frame. (Col 4 lines 11-35). Additionally Rangan teaches a pixel object tracking system,

which includes a processor, which automatically tracks, said selected pixel objects in

other frames. (Col 3, lines 26-50). It should be noted that it is well known in the art that

a computer system would inherently contain a processor. Rangan also teaches said

video linking system generating one or more linked video files, separate from said video

content said linked video file comprising a pixel object file identifying the selected pixel

object by frame number and location within the captured video frame and at least one

subsequent video frame (Col 6 lines 48-51, Col 10 lines 53-66) by explaining when

tracking element 29 (Fig. 2) is positioned and activated over an image entity to be

tracked, a signature table is created and stored (Col 8, lines 40-42) and upon tracking

element 29 being activated the tracking module creates a table or list comprising pixel

values associated with a target number and spatial arrangement of pixels associated

with tracking element 29. (Col 7, lines 40-43). It should be noted Rangan further

teaches providing one or more links to predetermined data objects for each pixel object.

(Col 7 lines 25-52, Fig. 2) Reagan also teaches linked video files are synchronized with

said video content. (Col 6, lines 48-51 and Col 10, lines 53-56) Furthermore Reagan

teaches wherein said linked video files are configured so that selected locations in said

video frames by a pointing device during playback of the video content can be linked

with said data objects when said selected locations correspond said pixel objects. (Col

7 lines 35-52) It should be noted that the point device as taught by Reagan is a mouse.

Nonetheless, Rangan fails to explicitly teach a separate data object file that includes

information related to the object that corresponds to the selected pixel object, the data

object file being linked to the corresponding pixel object file.   This is what Feinleib

teaches. (Col 3 lines 51-65, Col 9 lines 27-39, Col 11 lines 17-27) It should be noted

that Feinleib teaches enhancing content may reside in a viewers home and is

synchronized by a closed caption script of the primary content with the synchronization

independent of how and when the enchancing content or primary content is delivered

to the viewer computing units. (Col 6 lines 23-30) It should be noted that Feinleib

teaches linked data objects could be (configured to be) exportable to a media player as

the data objects can reside on a computer disk or CD ROM. (Col 5 lines 40-44) Again,

Feinleib explicitly teaches enhancing content can be **delivered independently** of the

primary content and synchronized at the viewer-computing unit using the closed

captioning script, which accompanies the primary content. (Col 9 lines 30-40).   It would

have been obvious to one of ordinary skill in the art at the time the invention was made

to combine the teachings a separate data object file that includes information related to

the object linked to the video content into the system of Reagan because

enhancements to primary content can be timely introduced at desired junctures of the

primary content. (Col 2 lines 14-20) However neither Rangan nor Feinleib explicitly

teaches a video linking system which samples video content at a sample rate which is a

divisor of plural standard playback rates. This is what Courtney teaches (Col 15 line 28-

Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40) It should be noted that Courtney

teaches 315 frames captured at approximately 3 frames per second (Col 16 lines 8-25)

and it is well known in the art to utilize standard playback rates such as NTSC at 30

FPS and FPS at 12 FPS. It would have been obvious to one of ordinary skill in the art

at the time the invention was made to combine the teachings of sampling video content

at 3 frames per second (a divisor of a plurality of standard playback rates) into the

combination of Rangan and Feinleib because testing the quality of motion based event

detection of differing frame rates (such as 3 frames per second) can be achieved and

thus, providing more intelligent feedback regarding the occurrence of complex object

actions such as inventory theft (Col 2 lines 59-63) can be realized.

Claim 29 is similar in scope to claim 1 except for the recitation of clustering the

sampled video content with plural frames per cluster. Courtney also teaches this (Col

15 line 28-Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40). For example, it should

be noted that Courtney teaches a 315 frame cluster captured at 3 frames per second. It

would have been obvious to one of ordinary skill in the art at the time the invention was

made to combine the teachings a 315 frame cluster sampled at 3 frames per second

into the combination of Rangan and Feinleib because testing the quality of motion

based event detection of differing frame rates (such as 3 frames per second) can be

achieved and thus, providing more intelligent feedback regarding the occurrence of

complex object actions such as inventory theft (Col 2 lines 59-63) can be realized.

Regarding claims 17 and 27, Courtney teaches clustering the sampled video

content with plural frames per cluster. (Col 15 line 28-Col 16 line 24, Fig. 24, Col 16 line

51-Col 7 line 40). For example, it should be noted that Courtney teaches a 315 frame

cluster captured at 3 frames per second. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine the teachings a 315 frame

cluster sampled at 3 frames per second into the combination of Rangan and Feinleib

because testing the quality of motion based event detection of differing frame rates

(such as 3 frames per second) can be achieved and thus, providing more intelligent

feedback regarding the occurrence of complex object actions such as inventory theft

(Col 2 lines 59-63) can be realized.

Regarding claims 2 and 20, Courtney teaches sampling said video content at a

sample rate of a divisor of 30 frames per second and 12 frames per second. (Col 15

line 28-Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40) It should be noted that

Courtney teaches 315 frames captured at approximately 3 frames per second (Col 16

lines 8-25) It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of sampling video content at 3 frames per

second (a divisor of a plurality of standard playback rates) into the combination of

Rangan and Feinleib because testing the quality of motion based event detection of

differing frame rates (such as 3 frames per second) can be achieved and thus, providing

more intelligent feedback regarding the occurrence of complex object actions such as

inventory theft (Col 2 lines 59-63) can be realized.

Regarding claims 3 and 21, Courtney teaches a sample rate of at least 3 frames

per second. (Col 15 line 28-Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40) It should

be noted that Courtney teaches 315 frames captured at approximately 3 frames per

second (Col 16 lines 8-25) It would have been obvious to one of ordinary skill in the art

at the time the invention was made to combine the teachings of sampling video content

at 3 frames per second (a divisor of a plurality of standard playback rates) into the

combination of Rangan and Feinleib because testing the quality of motion based event

detection of differing frame rates (such as 3 frames per second) can be achieved and

thus, providing more intelligent feedback regarding the occurrence of complex object

actions such as inventory theft (Col 2 lines 59-63) can be realized.

Regarding claims 13, 16 and 23 and 26, Courtney teaches sampling said video

content at a sample rate of a multiple of NTSC and PAL (movie) frame rates. (Col 15

line 28-Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40) It should be noted that

Courtney teaches 315 frames captured at approximately 3 frames per second (Col 16

lines 8-25) and it is well known in the art to utilize standard playback rates such as

NTSC at 30 FPS and FPS at 12 FPS. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine the teachings of sampling

video content at 3 frames per second (a divisor of a plurality of standard playback rates)

into the combination of Rangan and Feinleib because testing the quality of motion

based event detection of differing frame rates (such as 3 frames per second) can be

achieved and thus, providing more intelligent feedback regarding the occurrence of

complex object actions such as inventory theft (Col 2 lines 59-63) can be realized.

Regarding claims 14-15, 24-25 Courtney teaches sampling video content at a

sample rate of a multiple of NTSC, PAL, 15 FPS and 12 FPS frame rates. (Col 15 line

28-Col 16 line 24, Fig. 24, Col 16 line 51-Col 7 line 40) It should be noted that Courtney

teaches 315 frames captured at approximately 3 frames per second (Col 16 lines 8-25)

and it is well known in the art to utilize standard playback rates such as NTSC at 30

FPS and FPS at 12 FPS. It would have been obvious to one of ordinary skill in the art

at the time the invention was made to combine the teachings of sampling video content

at 3 frames per second (a divisor of a plurality of standard playback rates) into the

combination of Rangan and Feinleib because testing the quality of motion based event

detection of differing frame rates (such as 3 frames per second) can be achieved and

thus, providing more intelligent feedback regarding the occurrence of complex object

actions such as inventory theft (Col 2 lines 59-63) can be realized.

Regarding claims 11 and 22, Rangan teaches including a video playback

application for playing back video content and said linked video files, wherein said video

playback application is configured to determine if locations selected by a pointing device

during playback of the video content correspond to said predetermined pixel objects and

provide a link to a data object when said selected location corresponds to one of said

determined pixel objects. (Col 7 lines 35-52) It should be noted that the point device as

taught by Reagan is a mouse.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rangan (6198833) in view of Feinleib (6637032) in further view of Courtney (6424370)

and Toklu (6549643).

Regarding claim 4, Rangan, Feinleib and Courtney do not explicitly teach said

video linking system is configured to identify segment breaks in said video content.

This is what Toklu teaches. Toklu teaches video summarization methods typically

include segmenting a video into an appropriate set of segments such as video "shots"

and selecting one or more key-frames from the shots. (Col 1, lines 34-37) It should be

noted that a key-frame is defined in the art to be a frame used to indicate the beginning

or end of a change made to the signal and therefore, an implied segment break.   It

would have been obvious to one of ordinary skill in the art at the present time the

invention was made to combine video summarization methods configured to identify

segment breaks as taught by Toklu with the image processing system as taught by

Rangan in order to reduce the number of images to one or more key-frames to

represent the content of a given shot (Col 1, lines 43-45) and thus, to generate a video

summary. (Col 1, line 33).

Regarding claim 5, Rangan, Feinleib and Courtney do not explicitly teach said

segment breaks are determined by determining the median average pixel values for a

series of frames and comparing changes in the pixel values relative to the median

average and indicating a segment break when the change in pixel values represents at

least a predetermined change relative to the median average. This is what Toklu

teaches. Toklu teaches determining median average pixel values for a series of

frames by showing computing an average of an absolute pixel-based intensity

difference between consecutive frames in each segment, and for each segment,

computing a cumulative sum of the average of the absolute pixel-based intensity

differences for the corresponding frames of the segment. (Col 3, lines 61-67) Toklu

also teaches comparing changes in pixel values relative to median average by

explaining selecting the first frame in each motion activity segment of a given segment

frame if the cumulative sum of the average of the absolute pixel-based intensity

differences for the frames of the given segment does not exceed a first predefined

threshold. (Col 4, lines 1-5) Lastly, Toklu teaches indicating a segment break when the

change in pixel values represents at least a predetermined change relative to the

median average by showing selecting a predefined number of key-frames in the given

segment uniformly, if the cumulative sum of the average of the absolute pixel-based

intensity differences for the frames of the given segment exceeds the first predefined

threshold. (Col 4, lines 5-9) It should be noted that a key-frame is defined in the art to

be a frame used to indicate the beginning or end of a change made to the signal and

therefore an implied segment break. It would have been obvious to one of ordinary

skill in the art at the present time the invention was made to combine determining the

average pixel values for a series of frames, comparing changes in pixel values relative

to the average and indicating a segment break when the change in pixel values

represents at least a predetermined change relative to the median average as taught

by Toklu with the image processing system as taught by Rangan in order to measure a

temporal activity curve for dissimilarity based on frame differences. (Col 3, lines 60-62)

and thus, make possible in the system and method for selecting key-frames from video

data. (Col 3, lines 51-59)

Claims 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Rangan (6198833) in view of Feinleib (6637032) in further view of Courtney

(6424370) and Toyama (5204749).

Regarding claims 18 and 28, neither Rangan nor Feinleib explicitly teaches

automatically determining changes in the characteristics of said one or more pixel

objects based on upon changes in lighting and automatically compensating based upon

those changes. This is what Toyama teaches. (Col 3 lines 59-62, Col 13 line 40-Col 14

line 50, Fig. 9) It should be noted that Toyama teaches automatically detecting changes

in the follow-up field of the object (automatically shifting color coordinate plane of values

(R-Y/Y) and (B-Y/Y) from points A0, B0, C0 to A1, B1, C1 [Fig. 9]). Furthermore it

should be noted that Toyama teaches said changes in the color difference signals are

based on (accounting for) changes in lighting and also permits stable follow-up by

automatically compensating for variations in luminance of the illuminating light. It would

have been obvious to one of ordinary skill in the art at the time the invention was made

to combine the teachings of automatically determining changes of one or more pixel

objects based upon changes in lighting and automatically compensating for those

changes into the system of Rangan because prevention of each of the points on the

coordinate system from coming close to the origin or moving farther way from the origin

(due to luminance of light varying with time) while the object is not moving can be realized (Col 15 lines 48-54) and thus, stably performing a follow-up operation in despite of variations in luminance of illuminating light (Col 3 lines 59-62) can be achieved.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin K. Xu whose telephone number is 571-272-7747. The examiner can normally be reached on 8:30AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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8/1/08